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## ABSTRACT

Respondents to a 1982-83 survey of assessment practices in California's community colleges identified Sacramento City College (SCC), Fullerton College (FC), Sierra College (SC), and Victor Valley College (VVC) as having the most effective assessment/placement programs in the state. Interviews conducted on-site with at least three staff members involved in program administration, operation, or design at each campus gathered information on program development and testing policies; registration and assessment procedures; reactions to the program from counselors, students, and faculty; components leading to statewide recognition; and future directions. The interviews revealed that, although there were many differences among the institutions and among their programs, there were a number of similarities, including the following: (1) all of the colleges assessed a high percentage of entering students; (2) all relied heavily upon the computer, using it to provide a prescriptive printout for students within hours of assessment; (3) all but VVC required specific scores for entering English and language arts courses; (4) all but SC used a standardized assessment instrument; (5) administrative leadership and faculty involvement were important in all colleges; and (6) all schools but SC operated a testing office with opportunity for ongoing assessment. The study report includes profiles of each school's assessment program, summary findings, and appendices showing innovations. (HB)

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VC 840 093

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As part of a survey of assessment practices of California community colleges in 1982-1983, to which 99 colleges (93 percent) responded, college personnel identified campuses with effective assessment/placement programs. The four colleges most often named as having effective programs were: First-Sacramento City College in Scaramento; Second-Fullerton College in Fullerton; and Tied for Third-Sierra College in Rocklin and Victor Valley College in Victorville.

Visits were made to each of the four colleges most often cited, and interviews were conducted with at least three staff members on each campus who were involved in some way with the administration, operation, or design of the assessment and placement program, or whose instruction was affected by it. Areas examined were 1)Program Development and Testing Policies; 2)Registration and Assessment Procedures; 3)Reactions to the Program from counselors, students, and faculty; 4)Components Leading to Statewide Recognition; and 5)Future Directions. Results of the interviews are summarized below.

#### Program Development and Testing Policies

##### Sacramento City College

Located not far from the center of Sacramento, Sacramento City College had a full-time day and evening enrollment of 5,165 students and a part-time day and evening enrollment of 10,823 in Fall, 1981 (Chancellor's Office, 1982). Those interviewed at Sacramento were

Dorothy Bray, Assistant Dean, Division of Language and Literature; Paul Steed, Assistant Dean, Division of Science, Math, and Engineering; and Murray Haase, Coordinator of Assessment.

The testing program was designed largely by Haase; however, he has worked closely with Bray, who has promoted a focus on assessment throughout the state through her role in the formation of LARC, the Learning, Assessment and Retention Consortium organized in late 1981.

Early in 1978, concerns about attrition rates and the lack of knowledge about the entry level of language arts students prompted Fujimoto, then president of Sacramento City College, to assign Haase to develop an assessment program. The program that was developed has become the best known in the state.

The testing instrument used by Sacramento City is the Stanford Test of Academic Skills (TASK); it was chosen partly because it was one of the three tests examined that were normed for community colleges, partly because it included reading, grammar, and math, and partly because it has two forms. Haase considers it to be a "very solid" test and believes the test does a good job of predicting whether a student can earn at least a "C" in courses in which he or she is interested.

The first testing in the new center took place in the summer of 1978, and initial TASK norms for English classes were established. Sacramento City at first

permitted a semi-mandatory assessment policy for English placement. Follow-up studies of the 5 percent who refused to accept the recommendations and were permitted to enroll where they wished, indicated that most of this group were unsuccessful; self-placement is now not permitted, although students do have the option to write a challenge essay. The challenge, in fact, is rarely used. There was initial concern about possible loss of enrollment in higher level English courses, but no such problem arose.

Currently students enrolling in any English course or taking more than 10 units must take the assessment test. In addition, many of the occupational courses require reading and/or math scores. About 75 percent of all students are assessed.

The testing prerequisites are monitored through the use of a card or computer system. Cards are generated by the testing office or by English teachers at the end of each semester as students pass through the various reading or composition course "ladders." Students must pick up copies of the cards at the office or in a special booth during registration each semester in order to enter classes which have skills prerequisites. For first-time students, computer tear-off sheets are now replacing cards.

A wide variety of instruments is available on a daily basis, and a computer printout of results is provided to each student immediately after the test.

Over 25,000 students a year are tested. Although several departments, such as Math and Social Science, required no assessment as of the 1982-1983 school year, they are exploring the possibility of moving in that direction.

Bray and Haase feel strongly that an essential factor in an assessment program is the close relationship of assessment and curriculum development and that the installation of an assessment program without concomitant curriculum modification will not produce the desired results. Considerable in-service effort for faculty is also critical.

#### Fullerton

Fullerton is also in a metropolitan area, near downtown Fullerton. The college had a full-time day and evening population of 4,469 and a part-time population of 15,852 in Fall, 1981 (Chancellor's Office, 1982). Interviews were held with Jeanne Hamilton, Associate Dean of Student Development; LeRoy Cordrey, Coordinator of Institutional Research; Janet Portolan, Division Chair, Humanities; and Francis England, Coordinator of the Skills Development Center.

In 1978 Fullerton, under the direction of Cordrey, obtained state grant monies to assess reading skills needed for specific courses. Goals of the research were to reduce the attrition rate by at least 5-10 percent; improve student learning through diagnosis, counseling

and remediation; and increase academic performance. Fifty-two entry-level courses on the campus were involved in the project, and over 3,836 students were tested. The study concluded that screening the students for reading problems, placing them in appropriate programs, and helping to remediate problems did result in some reduction of attrition; it recommended a continuation and broadening of the program.

In 1981-1982 the faculty voted to require the 10th grade reading level for all transfer courses, unless the courses were exempted as not reading-dependent. Such a program was installed in Fall, 1982, and a similar requirement for non-transfer courses will be installed in Fall, 1983. Fullerton tested 6,133 students for entrance into the Fall, 1982, semester, and an additional 2,700 students for entrance into the Spring, 1983, semester.

The language arts assessment instruments used prior to and including the 1982-1983 school year were the Cooperative English Expression and Reading tests (Coop). The reading instructors, however, have recommended changing to the Degrees of Reading Power (DRP), published by the College Board; this instrument was pilot-tested in the spring of 1983 for consideration in Fall, 1983. English instructors were also actively looking for a new assessment instrument. An institutionally developed mathematics test, with item analysis, was installed in Fall, 1982. English, reading, and mathematics recommendations appear

on the prescriptive computer printout given the students after assessment.

Fullerton now has mandatory assessment (with some specific exemptions) and requires prerequisite scores to enroll in all its language arts and reading-dependent courses. Students who do not score at least 7th grade level are not permitted to enter any reading or reading-dependent courses on campus but are referred to the adult education program. Despite the 10th grade reading requirement for entry of any reading-dependent, transfer course, students who score just below the cut-off level may enroll in transfer courses provided they are concurrently enrolled in the reading assistance program. Courses which have skills prerequisites are identified in the printed schedule of classes.

In order to monitor the requirements, Fullerton requires students to present their computer printout or the counselor's summary sheet when they register; if they do not have these, they are directed to an assessment appointment. As additional monitoring, at the end of the fall semester, instructors in language arts send out "pass" lists to other instructors in their department so that students who have registered in the next level class but did not pass the previous level can be identified. Cordrey is currently working on a test-clearance computer program for the fall of 1983; however, because Cordrey believes it is expensive and inadvisable to enter data that one hopes

to change into a student's permanent record, he does not intend to put the test scores into the permanent file.

### Victor Valley

Victor Valley is located in Victorville, on the Mojave Desert, approximately halfway between Barstow and San Bernardino. The college is the youngest and smallest of the group visited. It began classes in 1961, and its Fall, 1981, full-time day and evening enrollment was 1,171 and the part-time enrollment was 3,286 (Chancellor's Office, 1982). Interviewed at Victor Valley were Virginia Holton, Vice President of Instruction; William Alcorn, Vice President of Student Services; Charles Peterson, Associate Vice President of Instructional Services; Milton Danielson, psychology instructor and former Vice President of Instruction; and David Longshore, Department Chairman of the Learning Center and Developmental Education program.

A major impetus for the Victor Valley project came after John Roueche spoke on retention concerns at the annual inter-semester faculty workshop in January of 1981. Under the leadership of Danielson and Alcorn, a committee began to explore programs in other colleges: Chabot Valley, Fullerton, Glendale, Sacramento, San Joaquin Delta, Sierra, and Los Angeles District colleges. It also looked into programs in Washington, Oregon, and Florida, and a delegation attended the organizational meeting of LARC-North in November, 1981. In spring of 1982, a state Fund for

Improvement grant to develop an assessment program was partially funded; Cordrey of Fullerton was hired as a consultant.

In Fall, 1982, using the Comparative Guidance and Placement battery recommended by several colleges, and providing students with a computer printout based on the Sierra model, Victor Valley instituted mandatory college-wide assessment for both full- and part-time students. The college presently gives only the reading, English, and mathematics sections of the CGP; the vocabulary and algebra parts have been eliminated to cut testing time to about two hours. Approximately 5,000 students were tested the first semester of implementation.

Although Victor Valley has mandatory testing, it has advisory placement; that is, students are advised what they ought to take, but are permitted to register in courses they want. In order to help students make decisions, every class in the printed schedule is designated as to the reading level, A-D, that is required. (The level was determined by a procedure that involved textbook readability formulas and instructor input.) Administrators commented that students do tend to take the computer printout as if the advice were mandatory. In Fall, 1982, the first semester of the new program, only 5 percent of the students in English classes were registered above the level which they were recommended.

Sierra

Sierra is located in Rocklin, a rural community just northeast of Sacramento; in the fall of 1981 it had a full-time day and evening enrollment of 2,979 and a part-time enrollment of 8,017 (Chancellor's Office, 1982).

Interviewed at Sierra were James Hardt, Assistant Superintendent of Instruction; Barbara Dawson, reading instructor and former Coordinator of the Learning Center; and Katherine Routon, Writing Center Coordinator.

Sierra has had a policy of assessing reading and English for the past ten years; this assessment has been conducted primarily by English and Learning Center staff. The faculty initially developed and normed their own instruments; they still use the locally developed test for English composition placement but for the past three years have used the Nelson-Denny for reading assessment. Sierra tests approximately 2,000 students a semester. Staff hand-scored the tests until the computer program was developed two years ago. The results now go directly into the student's data base, and turn-around time for results can be as short as 40 minutes.

The computer produces a complete master list of all students who were tested, their specific reading and English scores--including subscores--and the reading and English placement recommendations. This list is available to all language arts and reading instructors, or they may have the students' scores printed on their roll sheets.

While students may not be forced out of classes for which they are officially "unqualified," they will be strongly counseled into more appropriate courses. To help prevent problems during the spring term, when students register before completing fall courses, instructors circulate a list of students who need to repeat their current English courses.

Sierra students receive a computer printout giving each one specific information about his or her scores and placement, in addition to recommendations of places on campus to seek assistance. Students have the option to challenge their placement scores by writing an essay. The prescriptive student printout, while a feature of all four exemplary programs, was actually pioneered for California community colleges by Dawson at Sierra in 1980-1981.

Placement scores are now required for the forestry and vocational nursing program as well as the English courses. In addition, the college is moving towards mathematics assessment, and a locally-developed instrument was used for the first time in Fall, 1982. Research is underway to validate the scores. The instrument will be used in the fall of 1983 for advising, and for mandatory placement in mathematics courses in fall of 1984.

## Specific Registration and Assessment Procedures

### Sacramento City College

At Sacramento City College, an applicant receives a letter from the counseling department offering three possible assessment appointments. The TASK is given several times daily, and a group orientation session follows the testing, during which students are given their computer printouts and explanations about the data and the recommendations. They may then see a counselor. (For an example of Sacramento's printout, see Appendix A) Students register in arena registration on given dates, determined alphabetically and by priority category. As incentive, first-time students are permitted to register ahead of returning students if they have completed both the assessment and orientation procedures.

### Fullerton

Fullerton's procedure is to request a brief form at application. A quick scan of the completed form reveals if testing may be omitted because the student already holds a college degree or has completed equivalent courses at other institutions (the student's word is accepted pending receipt of transcripts, a procedure that creates some problems). With these exceptions, all students are required to be assessed and, upon presentation of the application, a testing date is assigned. Tests are given

several times a week during registration periods, about twice weekly during the regular semester. No-show rate is high, however, so appointments are heavily overscheduled. Results of the three-and-a-half-hour test are scored on the Scantron and batch-processed at the district Univac computer; turn-around time is 36-48 hours. Approximately 8,700 students were tested in 1982.

At the time students are given the testing appointment, they are also given a counseling appointment for two or three days later. At the second appointment, a prescriptive computer printout is available for both the students and the counselors. (For an example of Fullerton's printout, see Appendix B.) Students then register.

#### Victor Valley

At Victor Valley, students complete the admissions forms and are given a later testing date. A computer printout is available within less than one hour after the student is tested on the CGP. The student is asked to attend a group orientation session following the testing, for an explanation of the printout. Victor Valley's printout provides a more personal explanation to the students than do the other colleges', but the actual test scores are coded; students are urged to see their counselors regarding additional information. They may, however, register without seeing a counselor after receiving their

printouts. Illustrations of Victor Valley's printout include the following excerpts:

Your test score shows you are an excellent reader. . . . All classes for which you meet the course prerequisites are open to you. . . . Thank you, John, for spending some time with us today and giving us the information which we believe will be valuable in helping you plan your college program.

or

You scored very low on the reading test. Please see Cynthia Allen of the Victor Valley College Counseling department in the Student Center to look at your test results and to get help with your reading skills. . . . Hold off taking any writing class for now. Taking two reading classes will help.

Similar information is provided for mathematics. (For an example of Victor Valley's printout, see Appendix C.)

#### Sierra

At Sierra the entrance exams are scheduled twice a month. Applicants are given two appointments, one for testing and the second, two or three days later, for a counseling appointment. Testing, which takes approximately two hours, will increase to three hours when the mathematics test is added. The printout message is considerably briefer than is Victor Valley's but does include a comment on specific areas of possible need, such as punctuation, vocabulary, or spelling, taken from the subtest scores.

The students return to pick up their printouts and go on to their counseling appointments. Registration then takes place. Sierra's Scantron answer sheets include several questions about second language or other special

needs which provide data that are particularly helpful to the counselors. (For an example of Sierra's printout, see Appendix D.)

### Reactions to the Program

#### Counselors

At Sacramento City College, administrators admit that counselors initially had reservations about the assessment concept, perhaps because Sacramento was one of the first community colleges in the state to reinstate mandatory assessment. By 1980, however, according to Bray, data indicating increased retention had begun to defuse the argument. By 1982 assessment had been identified as an "institutional priority," and counselors had recognized how effective it is. Haase offers as one example of evidence in the vocational area: dropout rate in the cosmetology program was reduced by 20 percent in the first year that assessment guidelines were used.

Hamilton at Fullerton also said that some counselors feel assessment scores have limited their interaction with students; in addition, there is concern about the problems of students who score below the 7th grade reading level and a feeling that the relationship with the adult education program to which these students are referred needs to be strengthened. By and large, however, most counselors are receptive to the total program and feel that the effort is a good one.

Alcorn at Victor Valley said that counselors are very pleased with the testing program and are seeing more students as a result of it. The computer printout, although it provides some specific information, also raises questions students want answered. Further, the counselors feel they now have more and better information for advising. They are currently involved in administering the tests and conducting the orientations, although there is a feeling that trained paraprofessionals could handle these aspects to free the counselors for more one-to-one interaction.

At Sierra, there is a long tradition of language arts faculty handling assessment, and there has apparently been little conflict of this issue; if assessment is broadened, however, testing may become the counselors' responsibility. Counselors feel positive about the information provided by the computer printout and by the master list, as well as the profile questions; these data enable them to help more students in less time.

#### Faculty

Haase at Sacramento City said that an effective assessment program was impossible without "taking the faculty with you." At Sacramento, the faculty who are involved--such as the English and vocational instructors--are cooperative and enthusiastic. Bray added that one of the by-products of the joint assessment-faculty effort had

been increased motivation both for teaching and exploring methodology.

Those who are not involved in assessment now-- such as the mathematics instructors--are not so much opposed to assessment as continuing to look for instruments and procedures they feel will be superior to the practices they are currently using. Steed indicated the mathematics department will be doing some field-testing of instruments developed by the mathematics group at California State University at Sacramento, but that he in particular is also interested in finding an instrument that provides information about motivation or attitudes.

Hamilton at Fullerton agreed that the faculty there had been very supportive; in fact, the decision to go to campus-wide assessment had been a faculty decision. Although there had been an administrative agreement to support, initially, higher level courses if they were light-loaded because of the skills prerequisites, enrollment reduction had not occurred. The humanities division chairperson indicated that the reduced range within the classes was considerably more "humane" for both students and instructors. One result of the program was the impact on curriculum: the obvious need to be clearer about exit and entrance criteria in reading and English classes, and a task force has been assigned to rewrite these criteria. Another impact was to force a look at use of institutional resources; for example, instructors in other disciplines

whose courses have been identified as "reading-dependent" now have a larger stake in ensuring there are sufficient reading courses to prepare students with deficiencies.

Yet another impact has been on textbook selection. A major focus at both Fullerton and Victor Valley was to conduct a readability study of course textbooks. Both colleges use a computer program to determine readability. Many instructors, for the first time, looked closely at the reading level of their texts and the implications of that level for their courses. Hamilton said many were surprised at the difficulty level of their texts.

At Victor Valley, faculty are pleased with results of the new program. Instructors had argued, "If the institution can hold me responsible for the drop rate, I can hold the institution responsible for the raw material I get." The assessment program provides that accountability. Testing has also provided evidence of the need for additional English and developmental level courses, although lower level programs were not as impacted as had been anticipated.

At Sierra, for many years language arts faculty had been involved, and other instructors not at all involved, with assessment. That is beginning to change. A questionnaire being developed in the spring of 1983 was to determine faculty need and interest in assessment. Results will be used to help design the revised program. Dawson indicated that there was some evidence that faculty

more clearly perceived the need for writing assessment than for reading assessment. The administration is, however, putting increasing emphasis on the need for campus-wide assessment, and this focus will no doubt alter Sierra's procedures.

### Students

According to Haase, the program at Sacramento has had positive reaction from the students: the average serious student is very appreciative of the information, and there has not been major negative reaction from any group, including the minorities. Haase did emphasize the need for immediate turn-around of results, as his office discovered that many older students who are told they must return to get their scores often do not come back.

As with the Victor Valley program, Sacramento found fewer problem students than had been anticipated. Initially, the assumption was that the transfer level English composition course, 1A, would be reduced by 50 percent; however, 1A enrollment has stayed the same. Bray admitted that initially scores had been placed somewhat low and have since been adjusted upwards; the reading level now required for 1A is 13th grade. About 40 percent of entering students score at the 1A level; the remaining 60 percent are divided among three lower reading levels and two writing levels. Bray said student consciousness of the need for assessment is important: once students see

that assessment is a part of entering college, they accept the program and prepare for it.

Hamilton felt that assessment has had no apparent negative impact on registration at Fullerton, although some were frustrated with the paperwork that was involved, as registration has become at least a two-visit procedure. Many scoring below the 10th grade confessed they knew they had problems. Portolan and England from the humanities division said the majority of complaints had come from those who had tested below the 7th grade, but of those who had been given individualized assessment as a result of their complaints, very few were found to have been mistested.

Victor Valley prepared for its initial testing semester the prior spring and summer by flooding the community with information about the program, and this action was considered effective in promoting the generally positive reaction. The first fall brought about 50 complaining phone calls, but in spring complaints had dropped to two or three. Overall, registration did not appear to be impacted by the required assessment. Approximately 600 of the 5,000 students tested did not register for classes, however, and research is being conducted on the characteristics of this group. Preliminary indications are that they include some of the part-time avocational students as well as those scoring in the lower 15 percent.

One major impact was that, despite the fact there is no mandatory placement, English enrollment rose 45 percent. In the fall of 1981, 561 students were enrolled in English classes, as of the first census; in the fall of 1982, 891 students were enrolled. Although all levels had grown, the course immediately prior to English 1A had doubled from 148 students to 297. This growth was attributed to students having more specific information about themselves and their skills. Victor Valley had prepared for this impact by adding a new reading instructor in Fall, 1982.

Students at Sierra have been dealing with placement results much longer than Victor Valley students, as a 12th grade reading score, or passage of an equivalent reading course, has been required for the associate degree since 1972, so reading classes have long been filled. Dawson indicated she believes Sierra students also tend to be positive about the information and assistance provided, despite the fact that some occasionally complain about having to take specific courses at the behest of "God-the-computer."

#### Effective Components Leading to Statewide Recognition

Sacramento City College undoubtedly has the most widely-known program in the state, partly because it pioneered its assessment model in 1978 and partly because of the institution's strong role in developing LARC, which

has brought its program to the attention of the majority of colleges in the state. In addition, faculty and administration have been actively involved the past two or three years in presenting at various conferences and to state groups. Of those colleges who identified Sacramento as having effective assessment, two of the most frequently mentioned reasons were its research data bank and the comprehensive nature of its program.

Bray feels that one of the most effective parts of Sacramento's program is the intimate connection between assessment, placement, and curriculum. One fortuitous act, in her opinion, was the placing of the assessment office virtually in the center of the language arts classrooms and offices. Although not originally planned for this purpose, its location has resulted in day-to-day interaction that has been productive and valuable; relationships between assessment and instruction have been responsive in both directions and have resulted in program dynamism. In addition, Bray identifies strong administrative support and a strong facilitating administrator as critical to program quality. This administrative support has encouraged Haase's development of a good research data base. Haase confirms Bray's comments and adds that, for him, most satisfying has been the credibility his office has been able to establish as a result of the support for research. Further, his institution has a structure that has permitted creative

problem-solving and provided latitude for change when it has been needed.

Fullerton was also lauded for its research and comprehensive program. Hamilton says that the completeness of its program has given Fullerton visibility to other colleges and, for the past three years, many visitors have come from all over to look at procedures. Like Sacramento, Fullerton has done some pioneering.

Hamilton also identifies the campus-wide participation in the development of the assessment philosophy as having a major impact on the success of the program. As for the program itself, she points to the increased consistency in working with students and to the process--the screening of every student, the quick turn-around of information, and the computerized printout--as contributing to the effectiveness. She adds that students now have a better understanding of what is expected of them in college. The program has also resulted in better articulation among divisions. Cordrey points to the value of putting students where they can succeed and, if their skills are low, of providing the help they need.

Victor Valley, since receiving the grant from the state's Fund for Improvement program, has been carrying its message across the state and presenting in various arenas and thus has begun to be recognized. The comprehensive nature of Victor Valley's program was identified by most who named this college as being effective.

Staff at Victor Valley are pleased with the direction the college has taken. They point particularly to the computer printout and the rapid turn-around time, less than an hour. Longshore insists that students, given the reinforcement of the printout, go to class with more confidence they can succeed. Others on the staff add that the process of developing the program has brought institutional components together; in addition, it has moved the faculty, in a positive way, to look at curriculum, reading levels, teaching styles, and so forth.

Sierra's development of the computer printout with the prescriptive statements for students brought the most citations from colleges who named it. In addition, Sierra has provided supportive involvement for some very active faculty in statewide organizations, who have broadcast information about the program.

Dawson believes the program has provided early identification of students with serious problems, and this has been coupled with a responsive English and reading faculty who have developed programs that are flexible and serve the needs of all levels. Hardt is pleased that faculty are increasingly interested in and willing to consider using assessment to help students in all subjects.

#### The Future: Research, Needs, and New Directions

Considerable research has been done at Sacramento City College. One retention study looked at assessed and

unassessed students on the rolls of 47 different classes as of the first and fourth weeks; preliminary indications in every course were that assessed students are better retained than those who were not, regardless of the course. Another study compared the grades of students who test into English 1A with those who came up the "ladder" of previous courses. Indications are those who "test in" do better, and consideration is being given to incorporating more critical-thinking activities in the pre-1A course. Among other ongoing research is the correlation of reading scores to success in particular courses.

In discussing areas where work is still needed, Bray and Haase both commented on their interest that divisions not yet involved in assessment take a hard look at the competency needs of their students and decide how these needs should be measured. They urged continuation of staff development activities related to assessment and placement.

Within the next year or so Bray and Haase expect to see some interaction with local high schools, increased networking within their three-college district, and broader utilization of assessment/placement on campus. Bray looks for additional work to be done on identifying particular skill levels required for success in various courses on campus. Steed indicates he hopes his mathematics group will find a useful combination of assessment instruments that measure affective areas as well as skills.

Fullerton's follow-up research is looking closely at those students scoring below 7th grade reading who were not accepted into any language arts or reading-dependent course on campus; these students are currently referred to the adult education program. In the fall of 1982, of 6,200 tested, approximately 500 scored below 7th grade reading. Many of these were students for whom English is a second language; Fullerton is attempting to see how many of these students accepted the recommendations and enrolled in adult education.

Another group to be followed will be those testing at approximately 7th-10th grade level. The computers are storing information about this group, and it will be analyzed in the coming year. Other retention studies are being conducted. Cordrey expects to spend about half his time in this type of research, unless funding cuts make such efforts impossible.

Concerns at Fullerton tended to focus on budgetary issues. Hamilton must use part-time hourly employees to do much of the work related to registration and assessment. Cordrey also spoke of the financial commitment required to run an adequate program. He is concerned that, if major changes in state funding occur, assessment may be determined as too costly, despite its long-term savings.

Hamilton pointed to parts of the program she feels need attention: fewer opportunities for student manipulation of the system, clearer language on the computer

printout, and a class schedule showing more specifically the relation between test scores and other prerequisites. England and Portolan also commented on budgetary concerns as well as the need for closing various loopholes. In addition, they are involved in choices about testing instruments as well as discussions about curriculum improvement, including the need for a more specific entrance/exit ladder for language arts. Furthermore, they are concerned about the very limited ESL program and believe this area needs more study. One final need mentioned was for expanded interaction with local high schools.

In the next year or two Fullerton will be moving into new reading and writing tests as well as adding to capabilities of computer control in checking on prerequisite requirements. Test information should be available in the computer to produce more consistency in placement. Reading prerequisites will be established on non-transfer courses, and research will continue to examine appropriateness of established cut-off scores.

Victor Valley has begun to check which information is the most predictive and whether its cut-off scores have been located appropriately. Current scores may be too low, and reading levels may be modified, based on the research. Another study will examine whether students took the assessment advice and how well those who took the advice did as compared with those who did not. The staff is also concerned about a continuing need to find

ways to identify and assist the high-risk student. A number of other correlation studies are planned if time and funds permit.

At Victor Valley, as at Sacramento City, little has been done yet with mathematics assessment; therefore this remains an area to be examined soon. The college is also hopeful of reducing the time required for testing by determining if all parts of the CGP now used are necessary; in addition, in 1983-1984, staff would like to begin using the counseling component of the CGP and to find ways to increase the numbers of students who meet with counselors.

In the past, Sierra's research has been done primarily by interested faculty. For example, a study by Dawson and Lyman in the reading department found that 50 percent more students who entered reading below the 12th grade and took the recommended reading program persisted for a second and third semester, compared with a similar group which did not register for reading classes.

With broadening faculty and administrative interest in assessment, other research is now going on; one example is the institutional research on the locally-developed mathematics instrument that is being tested with the intention of using it for mandatory placement in math courses by 1984. A faculty questionnaire will determine other directions the faculty want to take in assessment.

Hardt would like to see the development of a campus philosophy of assessment as well as a determination of specific procedures for broader assessment. He believes assessment is no longer primarily a language arts concern, and that even the site of testing should be moved to a more centralized location on campus. He wants to see further research on instruments to determine if standardized instruments should replace the current locally-developed tools.

Dawson would like to look more closely at textbook readability and at instructor use of texts. She is concerned that, as students have come to read more poorly, instructors have increasingly relied on auditory methods for conveying nearly all information, even though perhaps not consciously. Lack of need to read seems correlated to lack of need to write, and the student fails to develop skills in either area. In addition, Dawson is hopeful that assessment data will be used increasingly, campuswide.

Within the next year and a half, mathematics assessment will become a more significant part of Sierra's assessment program, and other disciplines will also begin looking more closely at the value of using early skills information about their students.

### Summary of Interviews

There are many differences in the programs of the four most-mentioned colleges. Two are rural and two are urban; two are large, one is mid-sized, and one is small. Two are in northern California, and two are in southern California. No two use the same testing instruments and, while two have faculty-wide commitment to assessment, the two northern colleges are only now moving outward from assessment for language arts to broader measurement.

There are many similarities, however. All have a significant group of staff with a strong philosophical commitment to the educational benefit of assessment. All assess a high percent of entering students, rely heavily on the computer, and all provide a prescriptive printout for the students within a few hours of assessment. All believe in the importance of institutionally-supported research.

All but Victor Valley require specific scores for entering their English and language arts courses (Victor Valley's scores are advisory), and all still have some uncertainty about appropriate assessment for mathematics programs as well as for English as a Second Language. Of the four colleges, all but Sierra have a testing office and provide considerable ongoing testing during the school year. Sacramento, which tests fourteen times each week, has the most active program.

All require an exam at entrance, but Sierra, unlike the others, does not use a standardized instrument for English placement. Counter to the majority of colleges in the state, none of the four requires an English essay at placement, although Sierra and Sacramento both permit a challenge essay.

Fullerton and Victor Valley have both determined which courses have skills prerequisites, and they have printed this indication in their class schedules. Victor Valley's notation is the most specific, designating a reading level from A to D for each course. Fullerton is the only college of the four to require a specific reading level for entrance to all reading-dependent transfer courses, although Sacramento has developed advisory scores for many of its courses. Fullerton is also the only one to have developed a lower floor of skills below which it believes it does not have the resources to help students.

Each college has pioneered in some way. Sacramento City was first with the most comprehensive program and testing office; Sierra developed the prescriptive computer printout for community college students; Victor Valley is enforcing mandatory assessment for all part-time as well as full-time students; and Fullerton is requiring 10th grade reading skills for entrance into all reading-dependent courses and has instituted a 7th grade "floor."

Administrative leadership to provide support and funding is, of course, essential; and it has been

particularly evident in the initial development of the programs at Fullerton, Sacramento, and Victor Valley. At all three of these colleges, strong interaction between administration and faculty has brought the programs to their current stages of development. At Sierra, assessment was initially the province of a small group of language arts faculty. Administration there is now very interested in centralizing assessment and expanding it campus-wide.

Faculty involvement in assessment has also been important in all the colleges. Staff at all four colleges commented on the energy and effort related to instruction that has been generated by the process of interacting with the assessment program.

On all four campuses there has been a group of faculty and/or administrators who are excited and enthusiastic about their programs and want to share the results with other colleges. One common thread is that staff from all four colleges have made presentations at statewide conferences and meetings, and all have been involved with the development and growth of the Learning, Assessment, and Retention Consortium.

Commonalities, then, include the existence of some energetic faculty and administration who believe they can improve retention and provide more opportunity for students' success through increased information and prescriptive advising based on assessment. In addition,

there has been institutional willingness to support the efforts with appropriate funding and instructional programs. Broad faculty support has been essential where programs have expanded beyond language arts, as assessment invariably impacts on curriculum.

Use of the computer and a prescriptive printout, with rapid turn-around of information for advising, are major technical components of all four commended programs. A testing office, with opportunity for ongoing assessment, has been important, although Sierra has not had one. Also of considerable value has been the willingness to experiment and move into uncharted territory; however, institutional research to evaluate the changes and validate them seems essential to continued credibility and support.

Given these common elements, there has been opportunity for colleges to develop components of assessment programs that are unique to their individual institutions and best serve their own faculties, administration, and students. (For a comparison of the components of the programs at the four colleges, see Table 1.)

Table

Four Most Commended California Community Colleges, Data Comparing  
Demographics and Elements of Admissions Programs, 1982-1983

|                 | Student Enrollment |                   | Assessed at Entrance |         | Instruments Used/<br>Satisfaction Level |                     |                 |                   | Prescriptive<br>Printout to<br>Students | Testing<br>Office               | Regis-<br>tration<br>Style | Orien-<br>tation   |
|-----------------|--------------------|-------------------|----------------------|---------|-----------------------------------------|---------------------|-----------------|-------------------|-----------------------------------------|---------------------------------|----------------------------|--------------------|
|                 | FT Day<br>1981-82  | PT Day<br>1981-82 | Number               | Percent | English                                 | Reading             | ESL             | Math              |                                         |                                 |                            |                    |
| Sacramento City | 5,165              | 10,823            | 25,000               | 93%     | TASK<br>3.3                             | TASK<br>5.0         | Michigan<br>5.0 | Coop<br>ND*       | Yes                                     | Drop-in<br>All Year             | Arena                      | 2 hours<br>require |
| Fullerton       | 4,469              | 15,852            | 8,753                | 90%     | Coop Eng<br>4.0                         | Coop<br>Rdg.<br>2.0 | CELT<br>5.0     | Local<br>4.0      | Yes                                     | Special<br>dates on<br>calendar | Arena                      | 2 hours<br>recomm  |
| Victor Valley   | 1,171              | 3,286             | 5,000                | 100%    | CGP<br>5.0                              | CGP<br>5.0          | ND*             | CGP<br>3.0        | Yes                                     | Appt.<br>all year               | Arena                      | 3 hours<br>recomm  |
| Sierra          | 2,979              | 8,017             | 4,000                | ND*     | Local<br>4.75                           | NDRT<br>4.0         | NDRT<br>1.0     | Local,<br>in prep | Yes                                     | No                              | Indiv.<br>confer           | 2 hours<br>recomm  |

\*No Data

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# STUDENT PRINTOUT - FULLERTON

IA0110-A FULLERTON COLLEGE PLACEMENT TEST BATTERY RESULTS DATE 12/17/83  
 STUDENT NAME: [REDACTED] MAJOR UNDECIDED/UNDECLARED SEMESTER OF COLLEGE 0 1 2 3 4 5  
 STUDENT NUMBER: 229187 DATE OF BIRTH 59/04/03 TEST DATE: SPRING 83

| TEST SCORES:  |     |                  | COOP ENGLISH: |     |                  | SKILLS IN COMPUTATION & ALGEBRA TEST |     |                  |
|---------------|-----|------------------|---------------|-----|------------------|--------------------------------------|-----|------------------|
| COOP ENGLISH: |     |                  | COOP ENGLISH: |     |                  | SKILLS IN COMPUTATION & ALGEBRA TEST |     |                  |
| EXPRESSION    | RAW | SCALE (FC NORMS) | READING       | RAW | SCALE (FC NORMS) | COMPUTATION                          | RAW | SCALE (FC NORMS) |
| EFFECTIVENESS | 13  | 46               | VOCABULARY    | 36  | 85               | ALGEBRA                              | 6   | 31               |
| MECHANICS     | 28  | 86               | READING/SPEED | 28  | 77               | ELECTRONICS                          | 12  | 39               |
| TOTAL         | 41  | 78               | TOTAL         | 64  | 63               |                                      |     |                  |

HAS CLEARANCE FOR COURSES SPECIFIED BY "X" BELOW

|                                                                                                                               |                              |                               |                           |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------|-------------------------------|---------------------------|
| 51 INDIV LRM DEV OR ADULT ED                                                                                                  | 56A READING SKILLS           | X 142 INTERMEDIATE READING    | 133A RAPID READING        |
|                                                                                                                               | SKILLS DEVEL CNTR READING    | (RECOMMENDED)                 |                           |
| CONCURRENTLY ENROLL IN 56A READING SKILLS OR SKILLS DEV CNT' READING IN ORDER TO ENROLL IN COURSES WITH READING SKILLS PREREQ |                              |                               |                           |
| X ALL COURSES WITH READING SKILLS PREREQUISITE                                                                                |                              |                               |                           |
| X 60 PREP FOR COLL. WRITING                                                                                                   | X 55 BUSINESS ENGLISH        | X 51 PRACTICAL COMMUNICATIONS | 135AB MAGAZINE PRODUCTION |
| 100 COLLEGE WRITING                                                                                                           | 111 BUS. COMMUNICATIONS      | 101-102 REPORTING & WRITING   |                           |
| 151 POLICE REPORT WRITING                                                                                                     | 170A/B U.S. HISTORY          | 112 SCIENTIFIC COMMUNICATION  |                           |
| 51 BASIC MATH                                                                                                                 | X 151 BUSINESS MATHEMATICS   | X 20 ELEMENTARY ALGEBRA       |                           |
| 10 COLLEGE ARITH                                                                                                              | X 181A TECHNICAL MATHEMATICS | 110 INTERMEDIATE ALGEBRA      |                           |
| 80 RELATED MATH                                                                                                               | X 56A ELECTRONIC MATH        |                               |                           |
| ACCOUNTING 90 AND 51 BASIC BUSINESS MATH CONCURRENTLY                                                                         |                              | X 101A ELEM. ACCOUNTING       |                           |

YOUR S.C.A.T. RESULTS INDICATE THAT YOU WOULD BENEFIT FROM A REVIEW AS SOON AS POSSIBLE OF THE FOLLOWING MATH MODULES AVAILABLE IN THE SKILLS DEVELOPMENT CENTER:

| ARITHMETIC MODULES:          | ALGEBRA MODULES:             |                                 |
|------------------------------|------------------------------|---------------------------------|
| 3. DIVIDE WHOLE NUMBERS      | 1. SETS AND NUMERATION       | 8. BASIC FRACTIONAL OPERATIONS  |
| 4. FACTORS                   | 2. THE SET OF INTEGERS       | 9. FURTHER OPERATION-FRACTIONS  |
| 6. ADD-SUBTRACT OF FRACTIONS | 3. MULTIPLICATION & DIVISION | 10. MULT-DIVISION OF FRACTIONS  |
| 7. MULTIPLY-DIVIDE FRACTIONS | 4. ALGEBRAIC OPERATIONS      | 11. INTRO TO RECTANGULAR COORDS |
| 8. DECIMAL FRACTIONS         | 5. EQUATIONS                 | 12. SYSTEMS OF EQUATIONS        |
| 9. DIVIDE DECIMAL FRACTIONS  | 6. INTRODUCTION TO FACTORING | 13. RADICALS-INTERMEDIATE ALGEB |
| 10. PERCENT                  | 7. FACTORING TECHNIQUES      |                                 |

\*\* PLEASE RETAIN FOR FUTURE USE \*\*

APPENDIX A

34

# STUDENT PRINTOUT - SACRAMENTO CITY

FOR STUDENT USE ONLY

SACRAMENTO CITY COLLEGE  
Assessment Center  
Placement Card

NAME:

DATE:

SOCIAL SECURITY NUMBER:

TEST:

## READ - IMPORTANT INFORMATION - READ

This is a profile of your assessment results. Please read it. You may want to share the information with your counselor and instructors to help you make the academic and career decisions which will increase the effectiveness of the educational process.

### PLACEMENT ANALYSIS

|                     |                 |                |                   | Reading and Composition Skill Placement Levels |                             |              |
|---------------------|-----------------|----------------|-------------------|------------------------------------------------|-----------------------------|--------------|
|                     |                 |                |                   | 1                                              | 2                           | 3            |
| SUBJECT AREA(S)     | NUMBER POSSIBLE | NUMBER CORRECT | PER CENT ACCURACY |                                                |                             |              |
| Test 1: Reading     |                 |                |                   | Reading Courses                                |                             |              |
| Comprehension       | 51              |                |                   | R<br>E<br>A<br>D<br>I<br>N<br>G                | 70                          | 71, 74A, 74B |
| Vocabulary          | 37              |                |                   |                                                | 72, 73, 74A, 74B            |              |
| TOTAL               | 78              |                |                   |                                                |                             |              |
| Test 2: English     |                 |                |                   | E<br>N<br>G<br>L<br>I<br>S<br>H                | English Composition Courses |              |
| Learning Skills     | 15              |                |                   |                                                | 55                          | Tech 60      |
| Usage               | 21              |                |                   |                                                |                             | 66, Bus A    |
| Spelling            | 15              |                |                   |                                                | 67, 68, Bus 60              |              |
| Sentence Structure  | 6               |                |                   |                                                | 1A                          |              |
| Paragraph Structure | 12              |                |                   |                                                |                             |              |
| TOTAL               | 69              |                |                   |                                                |                             |              |

### DEFINITION OF ASTERISKS (\*)

Your composition course is determined by using both reading and English scores. Both reading and English results indicated by an asterisk (\*) must be located in the same Reading and Composition Skill Placement Levels column in order to take the composition course in that level. If the marks (\*) are in different levels, then the mark (\*) in the lowest level determines composition course placement. The reading course placement is determined by the reading score only.

COURSE PLACEMENT:

Reading:

Composition:

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## STUDENT QUESTION FORM AND FACULTY PRINTOUT, SIERRA COLLEGE



Sierra College

Use a number two (2) pencil only

Name: PRINT each letter in a separate box. List name first. Skip a space between names.

Fill in other required information.

To change a response, erase completely.

STUDENT FORM NO. 2496-SCC

FOLD THIS DIRECTION

NAME (LAST, FIRST, MI.)

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |    |   |    |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|----|---|----|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U  | V | W  | X | Y | Z |
| a | b | c | d | e | f | g | h | i | j | k | l | m | n | o | p | q | r | s | t | u  | v | w  | x | y | z |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
| ( | ) | [ | ] | { | } | < | > | ? | ~ | ^ | + | = | % | * | ^ | ~ | ! | @ | # | \$ | % | &  | ' | " | ~ |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
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| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 | . | / | - | + | = | % | * | ^ | ~ | ! | @  | # | \$ | % | & | ' |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |   |   |   |   |   |   |   |   |   |   |   |    |   |    |   |   |   |

## APPENDIX D (cont.)

38

## FACULTY PRINTOUT

update - Saturday testing 1/8/83

SIERRA COLLEGE

PROGRAM 1

TEST 8

WRITING CENTER  
01-08-93

| QUESTIONS<br>1 2 3 4 D S N F | RDG<br>DATE | READING<br>TOT VOC | FILE<br>COMP | EPT<br>DATE | EPT<br>TOT | SUBSKILL AREA<br>P S U V SP | ENGLISH & READING<br>RECOMMENDATIONS: |
|------------------------------|-------------|--------------------|--------------|-------------|------------|-----------------------------|---------------------------------------|
| N N Y N N N N N              | 01/08/83    | 15                 | 03           | 46          | 01/08/83   | 26                          | ENGA RD650 SD91                       |
| Y T N ? N N N N              | 01/08/83    | 02                 | 02           | 34          | 01/08/83   | 8                           | LSC SD65                              |
| M M ? N N N N N              | 01/08/83    | 52                 | 59           | 40          | 01/08/83   | 52                          | ENGA RD610 SD21 SD91                  |
| N N Y N N N N N              | 01/08/83    | 67                 | 70           | 53          | 01/08/83   | 50                          | ENGA RD610 SD21 SD91                  |
| N N Y N N N N N              | 01/08/83    | 09                 | 02           | 26          | 01/08/83   | 22                          | ENGA RD650 SD91                       |
| M N N N N N N N              | 01/08/83    | 04                 | 02           | 11          | 01/08/83   | 22                          | ENGA RD670                            |
| N Y Y N N N N N              | 01/08/83    | 33                 | 43           | 24          | 01/08/83   | 40                          | ENGA RD650 SD91                       |
| N Y ? ? N N N N              | 01/08/83    | 37                 | 50           | 26          | 01/08/83   | 20                          | LSC RD650 SD91                        |
| M N Y ? N N N N              | 01/08/83    | 56                 | 61           | 40          | 01/08/83   | 43                          | CHAL RD610 SD21 SD91                  |
| N ? ? N N N N N              | 01/08/83    | 31                 | 43           | 21          | 01/08/83   | 40                          | ENGA RD650 SD91                       |
| N A ? ? N N N N              | 01/08/83    | 71                 | 80           | 53          | 01/08/83   | 41                          | ENGA RD610 SD91                       |
| M N N N N N N N              | 00/00/00    | 00                 | 00           | 00          | 01/08/83   | 54                          | ENGA                                  |
| M N N N N N N N              | 01/08/83    | 54                 | 48           | 60          | 01/08/83   | 29                          | ENGA RD610 SD91                       |
| M N ? N N N N N              | 01/08/83    | 16                 | 03           | 34          | 01/08/83   | 28                          | ENGA RD650 SD91                       |
| M N N N N N N N              | 01/08/83    | 76                 | 74           | 66          | 01/08/83   | 39                          | ENGA RD610 SD91                       |
| N Y Y ? N N N Y              | 01/08/83    | 31                 | 29           | 40          | 01/08/83   | 33                          | ENGA RD650 SD91                       |
| N N Y ? N N N N              | 01/08/83    | 34                 | 37           | 40          | 01/08/83   | 36                          | ENGA RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 28                 | 23           | 40          | 01/08/83   | 28                          | ENGA RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 34                 | 37           | 40          | 01/08/83   | 32                          | ENGA RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 22                 | 32           | 17          | 01/08/83   | 34                          | ENGA RD650 SD91                       |
| N N Y Y N N N N              | 01/08/83    | 08                 | 27           | 04          | 01/08/83   | 36                          | ENGA RD670                            |
| N N N N N N N N              | 01/08/83    | 22                 | 37           | 14          | 01/08/83   | 30                          | ENGA RD650 SD91                       |
| N N Y ? N N N N              | 01/08/83    | 04                 | 06           | 04          | 01/08/83   | 20                          | LSC RD670                             |
| N N ? ? N N N N              | 01/08/83    | 37                 | 32           | 53          | 01/08/83   | 40                          | ENGA RD610 RD650 SD91                 |
| N Y Y Y N N N N              | 01/08/83    | 32                 | 46           | 21          | 01/08/83   | 39                          | ENGA RD650 SD91                       |
| N Y Y Y N N N N              | 01/08/83    | 22                 | 37           | 14          | 01/08/83   | 21                          | LSC RD650 SD91                        |
| N Y N N N N N N              | 01/08/83    | 90                 | 89           | 88          | 01/08/83   | 44                          | CHAL RD610 SD21 SD91                  |
| N N ? Y N N N N              | 01/08/83    | 46                 | 43           | 53          | 01/08/83   | 33                          | ENGA RD610 SD91                       |
| N N Y N N N N N              | 01/08/83    | 07                 | 08           | 11          | 01/08/83   | 37                          | ENGA RD670                            |
| N N ? N N N N N              | 01/08/83    | 37                 | 50           | 26          | 01/08/83   | 42                          | CHAL RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 14                 | 24           | 11          | 01/08/83   | 50                          | ENGA RD670                            |
| N N N N N N N N              | 01/08/83    | 06                 | 04           | 14          | 01/08/83   | 19                          | LSC RD670                             |
| M N Y N N N N N              | 01/08/83    | 14                 | 24           | 11          | 01/08/83   | 29                          | ENGA RD670                            |
| N N ? N N N N N              | 01/08/83    | 01                 | 03           | 02          | 01/08/83   | 18                          | LSC SD60                              |
| N N N N N N N N              | 01/08/83    | 42                 | 43           | 46          | 01/08/83   | 42                          | CHAL RD610 RD650 SD21                 |
| M N Y ? N N N N              | 01/08/83    | 29                 | 35           | 26          | 01/08/83   | 34                          | ENGA RD650 SD91                       |
| N N Y N N N N N              | 01/08/83    | 16                 | 24           | 14          | 01/08/83   | 32                          | ENGA RD650 SD91                       |
| M N ? N N N N N              | 01/08/83    | 15                 | 14           | 21          | 01/08/83   | 34                          | ENGA RD650 SD91                       |
| M N Y Y N N N N              | 01/08/83    | 17                 | 19           | 21          | 01/08/83   | 30                          | ENGA RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 04                 | 21           | 01          | 01/08/83   | 15                          | LSC SD60                              |
| N N ? ? N N N N              | 01/08/83    | 01                 | 01           | 01          | 01/08/83   | 22                          | LSC SD60                              |
| N N Y N N N N N              | 01/08/83    | 24                 | 24           | 34          | 01/08/83   | 34                          | ENGA RD650 SD91                       |
| N N ? Y N N N N              | 01/08/83    | 33                 | 29           | 46          | 01/08/83   | 46                          | CHAL RD650 SD91                       |
| N N Y N N N N N              | 01/08/83    | 31                 | 39           | 26          | 01/08/83   | 42                          | CHAL RD650 SD91                       |
| N N ? Y N N N N              | 01/08/83    | 07                 | 12           | 08          | 01/08/83   | 16                          | ENGA RD670                            |
| N N ? Y N N N N              | 01/08/83    | 20                 | 14           | 34          | 01/08/83   | 39                          | ENGA RD650 SD91                       |
| N N N Y N N N N              | 00/00/00    | 00                 | 00           | 00          | 01/08/83   | 27                          | ENGA                                  |
| M N Y Y N N N N              | 01/08/83    | 10                 | 10           | 14          | 01/08/83   | 31                          | ENGA RD650 SD91                       |
| N N N N N N N N              | 01/08/83    | 05                 | 14           | 03          | 01/08/83   | 30                          | ENGA SD60                             |
| N N Y N N N N N              | 01/08/83    | 16                 | 21           | 17          | 01/08/83   | 41                          | ENGA RD650 SD91                       |
| N N ? ? N N N N              | 01/08/83    | 01                 | 02           | 01          | 01/08/83   | 18                          | LSC SD60                              |
| N N ? N N N N N              | 01/08/83    | 66                 | 77           | 40          | 01/08/83   | 50                          | ENGA RD610 SD21 SD91                  |

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